

REPORT

OF

THE SECRETARY OF THE NAVY,

IN COMPLIANCE WITH

A resolution of the Senate of December 17, 1856, relative to the construction of steam vessels so as to provide greater security against accident by fire.

JANUARY 2, 1857.—Read, referred to the Committee on Commerce, and ordered to be printed.

NAVY DEPARTMENT,
December 27, 1856.

SIR: In reply to the resolution of the Senate of December 17, 1856, that the Secretary of the Navy "be requested to report to the Senate, whether, in his opinion, it is practicable and expedient to cause steam vessels to be so constructed as to afford greater security against accident by fire than now exists, and to submit such suggestions as he may think proper for legislation on that subject," I have the honor to state that the subject was referred to the chief of the Bureau of Construction, &c., and the engineer-in-chief of the navy, as the officers most competent to advise the department in the matter. A copy of their report is herewith respectfully submitted.

I have the honor to be, sir, your obedient servant,

J. C. DOBBIN.

Hon. J. D. BRIGHT,
President of the U. S. Senate.

NAVY DEPARTMENT, BUREAU OF CONSTRUCTION, ETC.,
December 26, 1856.

SIR: In compliance with your instructions on the resolution of the Senate of December 17, 1856, herewith returned, directing us to report on the subject of the "better security of steam vessels against accident by fire," we would respectfully state that we have given the subject careful consideration.

It does not appear to us that any variation is required in the ordinary construction of vessels of wood for this purpose, but in that part in which the boilers and fire-rooms are situated we think a greater degree of security can be given.

To this end we consider it practicable and expedient that the boilers for all sea-going steamers, and for all vessels having their boilers under the main deck, or using a forced draught, shall have their furnaces surrounded by the water of the boilers (or what is termed water bottoms,) and where there is a steam chimney it should extend above the continuous deck next over the boilers.

The framing of the deck, through which the smoke-pipe passes, to be covered with metal or some non-combustible substance, and between this framing of the deck and the smoke-pipe there shall be a covering or jacket (to the pipe) of iron, extending from the top of the steam chimney to above the upper deck, leaving a space of not less than six inches between the smoke-pipe and this jacket, arranged for the circulation of air, and a space of not less than six inches between this jacket and the frames or beams of the hatch; no wood work to be within six inches of the steam chimney or jacket of smoke-pipe; where there is no steam chimney, then there shall be within the jacket above named, at not less than four inches from it and four inches from the smoke-pipe, an additional jacket of sheet-iron connected to the boiler and extending not less than three feet above the boilers, and when such boilers have decks above them this inner jacket to extend above those decks, with an allowance for a free circulation of air between these jackets.

All fire-room floors to be made of iron plates, and all bulkheads and sides of fire-rooms to be either of, or covered with iron, as well as all the wood work over and above them.

All steamers with their boilers above decks, but not having water bottoms to their boilers, shall have them set on chairs, frames or brackets of iron, and shall be so arranged as to carry a sheet of water in pans between the boilers and deck, for the whole length and breadth that they are not protected by the water within the boiler from the action of the fire.

In some steam-vessels a large proportion of the above suggested precautions are taken; but assuming that nothing of the kind was provided, we think that it will not increase the first cost of machinery, &c., two per cent.

It is difficult to provide for exceptional cases that may be advanced; but we believe the above suggestions are practicable, that they will substantially add to the security of steam-vessels, and not unreasonably be made obligatory by law.

We are, respectfully, your obedient servants,

JOHN LENTHALL,

Chief of the Bureau.

DANIEL B. MARTIN,

Engineer-in-Chief.

Hon. J. C. DOBBIN,

Secretary of the Navy, Washington, D. C.